

REMARKS

The Office Action mailed October 5, 2005 has been carefully reviewed and the foregoing amendment and following remarks are made in consequence thereof.

Claims 1-8, 10-17, 19-30 and 32-35 are now pending in this application. Claims 1-35 stand rejected. Claims 9, 18, and 31 have been canceled.

The objection to the specification is respectfully traversed. Specifically, the Abstract of the disclosure has been amended to describe the portion of the disclosure directed to the apparatus, and paragraph [0014] has been amended to end with a period. In addition, Claims 3, 8, 12, 14, 15, 17, 18, 21, 25, 27, 28, 30, 31, and 34 have each been amended as supported by the specification. Moreover, Claim 1 has also been amended in accordance with the Examiner's suggestion. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objections to the specification be withdrawn.

The objection to Claims 1-10, 17, and 27 is respectfully traversed. Specifically, Applicants have amended Claims 1, 17, and 27 in accordance with the Examiner's suggestions. Claims 2-10 depend from independent Claim 1. Accordingly, for at least the reasons set forth above, Applicants respectfully request the objections to Claims 1-10, 17, and 27 be withdrawn.

The rejection of Claims 1, 2, 11, 23, and 24 under 35 U.S.C. § 102(e) as being anticipated by McRae, Jr. et al. (U.S. Pat. No. 6,923,616) is respectfully traversed.

McRae, Jr. et al. describe a rotor assembly (50) for a gas turbine engine (10). The rotor assembly (50) includes a plurality of rotor blades (52) that each include a platform (62), an airfoil (60), a shank (64), and a dovetail (66). The airfoil (60) extends radially outward from the platform (62) and the shank (64) extends radially inward from the platform (62) to the dovetail (66). The shank (64) includes a pair of opposed sidewalls (120, 122) coupled together by an upstream sidewall (124) and a downstream sidewall (126). A cooling circuit (130) extends through a portion of the shank (64) for supplying cooling air for impingement

cooling a portion of the rotor blade (52) through a plurality of openings (132, 134) extending through one of the shank opposed sidewalls (122).

Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method comprises “providing a first rotor blade . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform.”

McRae, Jr. et al. do not describe nor suggest a method for assembling a rotor assembly as is recited in Claim 1. Specifically, McRae, Jr. et al. do not describe nor suggest coupling a second rotor blade to the rotor shaft such that operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform. Rather, McRae, Jr. et al. describe a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 1 is respectfully submitted to be patentable over McRae, Jr. et al.

Claim 2 depends from independent Claim 1. When the recitations of Claim 2 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 2 likewise is patentable over McRae, Jr. et al.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade comprises “a platform comprising a radially outer surface and a radially inner surface, said platform further comprises a leading edge sidewall and a trailing edge sidewall connected together by a convex-side wall and an opposite concave-side wall, a portion of said trailing

edge sidewall is recessed between said platform radially outer and radially inner surfaces to facilitate platform trailing edge cooling”

McRae, Jr. et al. do not describe nor suggest a rotor blade as is recited in Claim 11. Specifically, McRae, Jr. et al. do not describe nor suggest a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge. Rather, McRae, Jr. et al. describe a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 11 is respectfully submitted to be patentable over McRae, Jr. et al.

Claim 23 recites a gas turbine engine rotor assembly comprising “a plurality of circumferentially-spaced rotor blades . . . each said rotor blade comprising an airfoil, a platform, a shank, and a dovetail . . . said platform further comprising a leading edge sidewall and an opposite trailing edge sidewall connected together by a pair of oppositely disposed platform sidewalls, at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of said platform trailing edge . . . at least a first of said rotor blades comprising an impingement cooling circuit extending through a portion of said shank for channeling cooling air from said blade cavity for impingement cooling said platform radially inner surface.”

McRae, Jr. et al. do not describe nor suggest a gas turbine engine rotor assembly as is recited in Claim 23. Specifically, McRae, Jr. et al. do not describe nor suggest a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge in combination with an impingement cooling circuit extending through a portion of the shank for channeling cooling air from the blade cavity for impingement cooling the platform. Rather, McRae, Jr. et al. describe a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform.

Accordingly, for at least the reasons set forth above, Claim 23 is respectfully submitted to be patentable over McRae, Jr. et al.

Claim 24 depends from independent Claim 23. When the recitations of Claim 24 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claim 24 likewise is patentable over McRae, Jr. et al.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1, 2, 11, 23, and 24 be withdrawn.

The rejection of Claims 1-3, 7, 8, 11, 12, 16, 17, 23-25, 29, and 30 under 35 U.S.C. § 102(b) as being anticipated by Wilson (U.S. Pat. No. 5,281,097) is respectfully traversed.

Wilson describes a rotor assembly for a gas turbine engine. The rotor assembly includes a plurality of rotor blades (18) that each include an airfoil (20), a platform (22), a shank (24) and a root (16). The shank (24) includes a pair of opposed, circumferentially-spaced sidewalls coupled together by a leading edge sidewall and a trailing edge sidewall. The radially inner side of each platform (22) is formed with a plurality of recesses (44) and inter-connected grooves (46) that each extend circumferentially from each recess (44) to a circumferential edge (22c) of platform (22). Compressor discharge air is routed into a cooling cavity (28) defined within each blade (18) via a plurality of metering passages (49) defined within a portion of a turbine disk (12) to which blades (18) are coupled. The cooling air is then channeled outward from cavities (28) through a plurality of damper openings (48) formed in one of the circumferentially-spaced shank sidewalls. The cooling air is then channeled through grooves (46) to facilitate convectively cooling the platform (22).

Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method comprises “providing a first rotor blade . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade

platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform.”

Wilson does not describe nor suggest a method for assembling a rotor assembly as is recited in Claim 1. Specifically, Wilson does not describe nor suggest coupling a second rotor blade to the rotor shaft such that operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform. Rather, Wilson describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 1 is respectfully submitted to be patentable over Wilson.

Claims 2 and 3 depend from independent Claim 1. When the recitations of Claims 2 and 3 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2 and 3 likewise are patentable over Wilson.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade comprises “a platform comprising a radially outer surface and a radially inner surface, said platform further comprises a leading edge sidewall and a trailing edge sidewall connected together by a convex-side wall and an opposite concave-side wall, a portion of said trailing edge sidewall is recessed between said platform radially outer and radially inner surfaces to facilitate platform trailing edge cooling”

Wilson does not describe nor suggest a rotor blade as is recited in Claim 11. Specifically, Wilson does not describe nor suggest a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge. Rather, Wilson describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 11 is respectfully submitted to be patentable over Wilson.

Claims 12, 16, and 17 depend from independent Claim 11. When the recitations of Claims 12, 16, and 17 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 12, 16, and 17 likewise are patentable over Wilson.

Claim 23 recites a gas turbine engine rotor assembly comprising “a plurality of circumferentially-spaced rotor blades . . . each said rotor blade comprising an airfoil, a platform, a shank, and a dovetail . . . said platform further comprising a leading edge sidewall and an opposite trailing edge sidewall connected together by a pair of oppositely disposed platform sidewalls, at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of said platform trailing edge . . . at least a first of said rotor blades comprising an impingement cooling circuit extending through a portion of said shank for channeling cooling air from said blade cavity for impingement cooling said platform radially inner surface.”

Wilson does not describe nor suggest a gas turbine engine rotor assembly as is recited in Claim 23. Specifically, Wilson does not describe nor suggest a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge in combination with an impingement cooling circuit extending through a portion of the shank for channeling cooling air from the blade cavity for impingement cooling the platform. Rather, Wilson describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 23 is respectfully submitted to be patentable over Wilson.

Claims 24, 25, 29, and 30 depend from independent Claim 23. When the recitations of Claims 24, 25, 29, and 30 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 24, 25, 29, and 30 likewise are patentable over Wilson.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-3, 7, 8, 11, 12, 16, 17, 23-25, 29, and 30 be withdrawn.

The rejection of Claims 1-5, 8, 11, 13-17, 23, 24, and 26-30 under 35 U.S.C. § 102(b) as being anticipated by Lee (U.S. Pat. No. 6,341,939) is respectfully traversed.

Lee describes a turbine blade (10) including an airfoil (18), a shank (22), a dovetail (24), and a platform (20). The platform (20) extends between the airfoil (18) and the shank (22). The dovetail (24) extends radially from the shank (22). A flow channel (28) extends through the turbine blade (10) for channeling cooling air through the blade (10). A pair of openings (36) each extend through opposite sides of the shank (22) and into the flow channel (28) to enable cooling air to be discharged from the cooling flow channel (28) outward through the shank (22). The platform (20) includes a plurality of openings (38) that extend from a radially outer side (20a) of the platform (20) to a radially inner side (20b) of the platform. At least one of the platform openings (38) is in tandem alignment with each shank opening (36). Cooling air discharged from the platform openings (38) provides convective and impingement cooling of the blade (10).

Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method comprises “providing a first rotor blade . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform.”

Lee does not describe nor suggest a method for assembling a rotor assembly as is recited in Claim 1. Specifically, Lee does not describe nor suggest coupling a second rotor blade to the rotor shaft such that operation a portion of a trailing edge of the first rotor blade

platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform. Rather, Lee describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 1 is respectfully submitted to be patentable over Lee.

Claims 2-5, and 8 depend from independent Claim 1. When the recitations of Claims 2-5 and 8 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 and 8 likewise are patentable over Lee.

Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade comprises “a platform comprising a radially outer surface and a radially inner surface, said platform further comprises a leading edge sidewall and a trailing edge sidewall connected together by a convex-side wall and an opposite concave-side wall, a portion of said trailing edge sidewall is recessed between said platform radially outer and radially inner surfaces to facilitate platform trailing edge cooling”

Lee does not describe nor suggest a rotor blade as is recited in Claim 11. Specifically, Lee does not describe nor suggest a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge. Rather, Lee describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 11 is respectfully submitted to be patentable over Lee.

Claims 13-17 depend from independent Claim 11. When the recitations of Claims 13-17 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 13-17 likewise are patentable over Lee.

Claim 23 recites a gas turbine engine rotor assembly comprising “a plurality of circumferentially-spaced rotor blades . . . each said rotor blade comprising an airfoil, a platform, a shank, and a dovetail . . . said platform further comprising a leading edge sidewall

and an opposite trailing edge sidewall connected together by a pair of oppositely disposed platform sidewalls, at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of said platform trailing edge . . . at least a first of said rotor blades comprising an impingement cooling circuit extending through a portion of said shank for channeling cooling air from said blade cavity for impingement cooling said platform radially inner surface.”

Lee does not describe nor suggest a gas turbine engine rotor assembly as is recited in Claim 23. Specifically, Lee does not describe nor suggest a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge in combination with an impingement cooling circuit extending through a portion of the shank for channeling cooling air from the blade cavity for impingement cooling the platform. Rather, Lee describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 23 is respectfully submitted to be patentable over Lee.

Claims 24, and 26-30 depend from independent Claim 23. When the recitations of Claims 24, and 26-30 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 24, and 26-30 likewise are patentable over Wilson.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of Claims 1-5, 8, 11, 13-17, 23, 24, and 26-30 be withdrawn.

The rejection of Claims 6, 9, 18, and 31 under 35 U.S.C. § 103(a) as being unpatentable over either McRae, Jr. et al., Wilson, or Lee in view of Chamberlin (U.S. Pat. No. 2,915,279) is respectfully traversed.

McRae, Jr. et al., Wilson, and Lee are all described above. Chamberlin describes a turbine assembly (10) including a plurality of turbine blades (11) that each include an airfoil portion, a platform (12) and a root portion (14). An upstream face (15) of each root portion

(14) includes a plurality of axially projecting ribs (20) that extend across the full face of the root portion. The circumferentially-spaced sides (17 and 18) of the root portion (14) each include a recess or depression (22) having a square cross-sectional shape. A corner between each face (17) and upstream face (15) is cut away, as indicated at (24), between root portion (14) and platform (12). Cut-away portion (24) enables cooling air to enter depressions (22) and form vortices which provide cooling to the blade (11). A downstream side of face (17) includes a cut-away portion (26) to enable the spent cooling air to be discharged from depressions (22).

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of McRae, Jr. et al., Wilson, Lee, or Chamberlin, considered alone or in combination, describe nor suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine any of McRae, Jr. et al., Wilson, or Lee with Chamberlin, because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching. Rather, only the conclusory statements that "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the rotor blades of either McRae, Wilson, or Lee such that the shank cavity is facilitated to be pressurized . . . as taught by Chamberlin, for the purpose of creating eddies or vortices in the cavities to improve the cooling effect. . ." suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicant's disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991).

In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching or suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

Further, and to the extent understood, none of McRae, Jr. et al., Wilson, Lee, or Chamberlin, considered alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method comprises “providing a first rotor blade . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform.”

No combination of McRae, Jr. et al., Wilson, Lee, and Chamberlin, describes or suggests a method for assembling a rotor assembly as is recited in Claim 1. Specifically, no combination of McRae, Jr. et al., Wilson, Lee, and Chamberlin, describes or suggests coupling a second rotor blade to the rotor shaft such that operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform. Rather, none of McRae, Jr. et al., Wilson, Lee, or Chamberlin, considered alone or in combination, describe or suggest a method for assembling a rotor assembly using a rotor blade that includes a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 1 is respectfully submitted to be patentable over McRae, Jr. et al., Wilson, or Lee in view of Chamberlin.

Claims 9, 18, and 31 have been canceled. Claim 6 depends from independent Claim 1. When the recitations of Claim 6 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claim 6 likewise is patentable over McRae, Jr. et al., Wilson, or Lee in view of Chamberlin.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 6, 9, 18, and 31 be withdrawn.

The rejection of Claims 19, 21, 22, 32, 34, and 35 under 35 U.S.C. § 103(a) as being unpatentable over either McRae, Jr. et al., Wilson, or Lee in view of Tomberg (U.S. Pat. No. 6,808,368) is respectfully traversed.

McRae, Jr. et al., Wilson, and Lee are all described above. Tomberg describes an airfoil shape for a turbine bucket (16). The turbine bucket includes an airfoil (36), a platform (30), a shank (32), and a dovetail (32). It appears that the shank includes a leading edge seal pin cavity and a trailing edge pin cavity.

Applicants respectfully submit that the Section 103 rejection of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some

teaching, suggestion, or incentive supporting the combination. None of McRae, Jr. et al., Wilson, Lee, or Tomberg, considered alone or in combination, describe nor suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine any of McRae, Jr. et al., Wilson, or Lee with Tomberg, because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching. Rather, only the conclusory statements that "it would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the rotor blades of either McRae, Wilson, or Lee such that the shank further comprises a leading edge seal pin cavity and a trailing edge seal pin cavity . . . as taught by Tomberg" suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levengood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicant's disclosure, in the prior art to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436 (Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or "template" to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching or suggestion in the cited art for the

combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason alone, Applicants request that the Section 103 rejection be withdrawn.

Further, and to the extent understood, none of McRae, Jr. et al., Wilson, Lee, or Tomberg, considered alone or in combination, describe or suggest the claimed combination, and as such, the presently pending claims are patentably distinguishable from the cited combination. Specifically, Claim 1 recites a method for assembling a rotor assembly for gas turbine engine, wherein the method comprises “providing a first rotor blade . . . coupling the first rotor blade to a rotor shaft using the dovetail such that during engine operation, cooling air is channeled from the blade internal cavity through a blade impingement cooling circuit for impingement cooling the first rotor blade platform radially inner surface . . . coupling a second rotor blade to the rotor shaft such that a platform gap is defined between the first and second rotor blade platforms, and such that during operation a portion of a trailing edge of the first rotor blade platform is facilitated to be cooled by cooling air channeled through a recessed portion of the platform.”

No combination of McRae, Jr. et al., Wilson, Lee, and Tomberg, describes or suggests a rotor blade for a gas turbine engine as is recited in Claim 11. Specifically, Claim 11 recites a rotor blade for a gas turbine engine, wherein the rotor blade comprises “a platform comprising a radially outer surface and a radially inner surface, said platform further comprises a leading edge sidewall and a trailing edge sidewall connected together by a convex-side wall and an opposite concave-side wall, a portion of said trailing edge sidewall is recessed between said platform radially outer and radially inner surfaces to facilitate platform trailing edge cooling”

Specifically, no combination of McRae, Jr. et al., Wilson, Lee, and Chamberlin, describes or suggests a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge. Rather, Lee describes a rotor blade that does

not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 11 is respectfully submitted to be patentable over McRae, Jr. et al., Wilson, or Lee, in view of Tomberg.

Claims 19, 21, and 22 depend from independent Claim 11. When the recitations of Claims 19, 21, and 22 are considered in combination with the recitations of Claim 11, Applicants submit that dependent Claims 19, 21, and 22 likewise are patentable over McRae, Jr. et al., Wilson, or Lee, in view of Tomberg.

Claim 23 recites a gas turbine engine rotor assembly comprising “a plurality of circumferentially-spaced rotor blades . . . each said rotor blade comprising an airfoil, a platform, a shank, and a dovetail . . . said platform further comprising a leading edge sidewall and an opposite trailing edge sidewall connected together by a pair of oppositely disposed platform sidewalls, at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of said platform trailing edge . . . at least a first of said rotor blades comprising an impingement cooling circuit extending through a portion of said shank for channeling cooling air from said blade cavity for impingement cooling said platform radially inner surface.”

No combination of McRae, Jr. et al., Wilson, Lee, and Tomberg, describes or suggests a gas turbine engine rotor assembly as is recited in Claim 23. Specifically, no combination of McRae, Jr. et al., Wilson, Lee, and Tomberg, describes or suggests a rotor blade including a platform wherein at least a portion of said trailing edge sidewall is recessed between said platform radially outer and inner surfaces to facilitate cooling of the platform trailing edge in combination with an impingement cooling circuit extending through a portion of the shank for channeling cooling air from the blade cavity for impingement cooling the platform. Rather, Lee describes a rotor blade that does not include a platform including a recessed portion that facilitates cooling a trailing edge portion of the platform. Accordingly, for at least the reasons set forth above, Claim 23 is respectfully submitted to be patentable over McRae, Jr. et al., Wilson, or Lee, in view of Tomberg.


Claims 32, 34, and 35 depend from independent Claim 23. When the recitations of Claims 32, 34, and 35 are considered in combination with the recitations of Claim 23, Applicants submit that dependent Claims 32, 34, and 35 likewise are patentable over McRae, Jr. et al., Wilson, or Lee, in view of Tomberg.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 19, 21, 22, 32, 34, and 35 be withdrawn.

The provisional rejections of Claims 1-35 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over various combinations of Claims 1, 2, 3, 6, 10, 11, 12, 13, 17, 21, 23, 24, 25, 26, 27, 29, 30, 32, and 33 of U.S. Patent Application No. 10/828,133, in view of various combinations of Wilson, Chamberlin, Tomberg, and Lee are respectfully traversed. None of the Claims of 10/828,133 have issued in a U.S. Patent. For at least the reasons given above, Applicants respectfully request that the provisional double patenting rejection of Claims 1-35 in view of various combinations of Wilson, Chamberlin, Tomberg, and Lee be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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